

**BY ORDER OF THE COMMANDER  
99TH AIR BASE WING (ACC)**

**NELLIS AIR FORCE BASE INSTRUCTION  
15-129**



**6 MAY 2015**

***Weather***

**WEATHER SUPPORT**

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This instruction establishes the responsibilities and procedures for providing and using weather services at Nellis AFB and it applies to all agencies described herein. It also implements and incorporates the requirements of Air Force Instruction (AFI) 15-128 ACCSUP, *Air Force Weather Roles and Responsibilities*, Air Force Manual 15-129V2 ACCSUP, *Air and Space Weather Operations – Exploitation*, and AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*. It provides general information on weather services including weather observations and forecasts, weather warnings and advisories, dissemination of weather information, and reciprocal support. Send comments and suggested improvements to this instruction on AF Form 847, *Recommendation for Change of Publication*, to 57 OSS/OSW, 6278 Depot Road, Building 805 Nellis Air Force Base, NV 89191. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

***SUMMARY OF CHANGES***

This manual has been updated to incorporate changes to guiding publications and to remain in compliance with those publications. Notable additions include the mission types flown at Nellis AFB and the applicable *Mission Operating Area Limitations* category. Weather Flight operating hours and the support provided to RED FLAG and GREEN FLAG Exercises were also updated. In addition, the standby forecaster recall procedures were improved and updates were made

regarding weather support with some base agencies. Additions include weather criteria and advisories specific to F-35 take-off, landing, and maintenance. Finally, items removed include non-essential explanations of METAR and TAF decoding.

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## Chapter 1

### GENERAL INFORMATION

**1.1. General.** This document provides a consolidated source of weather support capabilities, procedures, and responsibilities at Nellis AFB, NV. It does not eliminate the need for specialized weather support to be included in base/command operational plans. Air Force Weather concepts and procedures are outlined in Air Force and MAJCOM publications.

**1.2. Services.** The 57th Operations Support Squadron Weather Flight (57 OSS/OSW) provides or arranges for weather support to the 57th Wing (57 WG), the 99th Air Base Wing (99 ABW), and tenant units. In addition, the weather flight acts as the “eyes forward” for the 25th Operational Weather Squadron (25 OWS) at Davis-Monthan AFB, AZ. In concert with the 25 OWS, 57 OSS/OSW tailors products for criteria important to flying operations, base support agencies, and maintenance operations.

**1.3. Location and Hours of Operation.** The weather flight is located in Building 805, and is collocated with Airfield Management Operations (AMOPS). The weather flight is closed on weekends and federal holidays. When the weather flight is unmanned, there will be a forecaster on standby ready to augment the observation as defined in paragraph 2.6 Augmentation of Primary Observing Equipment, and respond to severe weather as defined in paragraph 5.7 Severe Weather Action Plan. See [Table 1.1](#) for weather flight contact information. Weather observations are automatically taken and disseminated through the weather flight’s automated observation system; this continues even when the weather flight is closed.

1.3.1. The operating hours for the Airfield Support section are primarily from 0730-1630 Monday through Friday, with extended hours during inclement weather and sensor outages.

1.3.2. The Mission Integration section is predominately located at the USAF Weapons School ops desk. During Red and Green Flag exercises, a forecaster will also be located at these locations. Mission Integration hours are established around the battle rhythm and flex based upon the mission requirements of Nellis AFB.

**Table 1.1. Weather Flight Contact Information.**

Weather Flight Commander	DSN 682-8707	Comm (702) 652-8707
Weather Flight NCOIC	DSN 682-8730	Comm (702) 652-8730
Airfield Support	DSN 682-4744	Comm (702) 652-4744
Weapons School Mission Integration	DSN 682-8868	Comm (702) 652-8868
Red Flag Mission Integration	DSN 682-2395	Comm (702) 652 - 2395
Green Flag Mission Integration	DSN 682-4262	Comm (702) 652-4262
Standby forecaster	DSN 682-2446 / 2447 (Command Post, which will contact the standby forecaster)	Comm (702) 423-8185 (Mobile phone carried by standby forecaster)
Alternate Operating Location (see paragraph 2.14)	DSN 682-4551	Comm (702) 652-4551
Fax	DSN 682-2604	Comm (702) 652-2604

**Table 1.2. 25 OWS Contact Information.**

Flight Weather Briefer	Voice DSN 228-6598/6599/6588 Fax DSN 228-7361	Comm (520) 228-6598/6599/6588 Fax (520) 228-7361
Senior Duty Officer	DSN 228-7655	Comm (702) 652-7655 (877) 451-8367 x1
Ops Superintendent	DSN 228-2445	Comm (520) 228-2445

**1.4. Geographic Area of Responsibility.** The area of responsibility for products and services provided by the weather flight is the terminal area which is defined as the area located within a five nautical mile radius around the center of the Nellis AFB airfield complex. The weather flight will also conduct a meteorological watch (METWATCH) and a mission meteorological watch (MISSIONWATCH) for all areas and routes in which Nellis AFB flying units are conducting operations. These areas include, but are not limited to, the Nevada Test and Training Range (NTTR), the Utah Test and Training Range (UTTR), and Range 2508 located at the National Training Center (NTC) at Ft Irwin.

**1.5. Duty Priorities.** All AF weather units are required to develop clearly defined duty priorities. The weather flight duty priorities are listed in Table 1.3.

**Table 1.3. Weather Flight Duty Priorities.**

Priority	Duties
1	Perform Emergency War Order taskings (to include 24/7 ACA support).
2	Evacuation of Weather Flight during emergencies.
3	Respond to aircraft and ground emergencies.
4	Respond to Pilot to Metro Service (PMSV) contacts. <b>Note:</b> This includes all contacts with airborne aircrews including phone patches, radio contacts, aircrew-generated computer messages, and contacts through satellite communications equipment and cell phones.
5	Provide weather information for the Supervisor of Flying (SOF).
6	Severe weather action procedures.
7	Relay Urgent PIREPs to 25 OWS
8	Augment automated observing system.
9	Collaborate with 25 OWS.
10	Produce and disseminate mission forecasts.
11	Disseminate PIREPs.
12	Perform MISSIONWATCH.
13	Provide Briefings.
14	Weather Functional Training.
15	Administrative Tasks.

**1.6. Forecasting Limitations.**

1.6.1. Limitations. The terrain features surrounding Nellis AFB and their effects on local weather patterns create forecasting and observing challenges. Therefore, forecasts beyond 30 hours will be used for planning purposes only.

1.6.2. Surrounding hills and mountains may block, enhance, or divert winds resulting in varying wind conditions across the airfield.

**1.7. Dissemination of Weather Information.** Timely and reliable dissemination of weather information is crucial for safety of flight and resource protection. The Weather Flight disseminates information in several ways.

1.7.1. AN/FMH-5, commonly known as the Joint Environmental Toolkit (JET) , is the primary means used by the weather flight and the 25 OWS to create and disseminate forecasts, observations, and weather warnings, watches, and advisories. The Air Traffic Control (ATC) Tower and the Nellis Air Traffic Control Facility (NATCF, referred to as Radar Approach Control or RAPCON at other bases) are equipped with Airfield Automation

System (AFAS) monitors to view JET information; any computer connected to the base network can also view JET information.

1.7.1.1. If JET is inoperative the backup procedures listed in paragraph 2.13.2 will be followed.

1.7.2. Weather information can be accessed through NIPRNET. The weather flight SharePoint site displays real-time information from JET, the latest satellite image and radar data, and the most recent Mission Planning Forecast and Mission Execution Forecast. The site is reached using the link titled "Weather" on the Nellis AFB sharepoint at [https://nellis.eim.acc.af.mil/org/57th\\_wing/57OG/57\\_Operations%20Support%20Squadron/OSW/default.aspx](https://nellis.eim.acc.af.mil/org/57th_wing/57OG/57_Operations%20Support%20Squadron/OSW/default.aspx). Additional weather products such as hazard charts and data for other locations can be found on the 25 OWS page: <https://ows.dm.af.mil>.

1.7.3. Nellis AFB agencies will be notified of weather watches, warnings, and advisories as detailed in paragraph 5.5.

**1.8. Weather Station Identifiers.** Forecasts and observations for Nellis AFB use the International Civil Aviation Organization (ICAO) identifier KLSV. The World Meteorological Organization (WMO) index number for KLSV is 72385.

**1.9. Release of Weather Information.** The weather flight will not provide weather information or support to non-DoD agencies or the public unless the request was coordinated with and approved by the 99 ABW Public Affairs office (99 ABW/PA).

**1.10. Records Retention.** All flight weather briefings, products produced by the weather flight, and mission-related contacts, regardless of format (i.e. electronic, verbal, or paper), will be documented and maintained IAW the AF Records Disposition Schedule and AFI 33-364, *Records Disposition - Procedures and Responsibilities*.

**1.11. Changes to this Instruction.** Modifications to this instruction will be coordinated through the weather flight biennially, or as changes to weather support requirements dictate.



## Chapter 2

### AIRFIELD SERVICES

**2.1. General** The weather flight continually takes and disseminates routine and special weather observations throughout the day. The observation equipment operates in full automated mode except under the conditions described in paragraph 2.6, meaning most observations will be sent without input from weather personnel.

**2.2. Primary Observation Equipment.** The AN/FMQ-19 Automated Meteorological Station (AMOS) is used to take official weather observations at Nellis AFB. It interfaces directly with JET, automatically disseminating observations locally and long-line. As shown in **Attachment 2**, the AN/FMQ-19 has two sensor suites, one located near the touchdown point of each runway. The sensors measure the following elements:

- 2.2.1. Wind direction and velocity.
- 2.2.2. Cloud heights and coverage.
- 2.2.3. Visibility.
- 2.2.4. Present weather.
- 2.2.5. Runway Visual Range (RVR).
- 2.2.6. Atmospheric pressure (runway 21 suite only).
- 2.2.7. Temperature (runway 21 suite only).
- 2.2.8. Dew point temperature (from relative humidity – runway 21 suite only).
- 2.2.9. Precipitation amount (runway 21 suite only).
- 2.2.10. Lightning distance and bearing (runway 21 suite only).

**2.3. Additional Equipment.** In addition to the AN/FMQ-19, the weather flight relies on the following equipment:

2.3.1. Gibson Ridge Radar Software. The weather flight displays and analyzes high-resolution weather radar data derived directly from national weather radars through this internet software program. The nearest weather radar is located on Nelson's Peak (approximately 30NM to the south of Nellis AFB) at an elevation of over 4,900 ft. This radar is controlled by the Las Vegas National Weather Service office. The weather flight also maintains a subscription with WeatherTap.com, a commercial internet weather information provider, as an alternate source for radar data.

2.3.2. Pilot to Metro Service (PMSV) Radio. The weather flight monitors frequency 323.9MHz. See paragraph 2.11 for details on the PMSV.

2.3.3. Local Area Network (LAN). The LAN is vital to weather operations. The weather flight uses the LAN to access and disseminate forecasts, observations, watches, warnings, advisories, satellite imagery, radar data, and lightning strike information. The weather flight also relies on the LAN to obtain flight weather briefing products and other operational products from the 25 OWS

**2.4. Equipment Limitations.** Currently known equipment limitations are listed below.

**2.4.1. AN/FMQ-19 Limitations.**

2.4.1.1. The following visibility Landing and Circling Minima identified in Terminal Flight Information Publications are not supported by the Nellis AN/FMQ-19: 1 1/8 SM, 1 3/8 SM, 1 5/8 SM, and 2 3/4 SM. Augmentation and reporting of these values will not occur.

2.4.1.2. Cloud height and coverage are determined by laser beam ceilometers, which look at a small portion of the atmosphere directly above the sensor. A representative sky condition is calculated for the entire celestial dome using a time-averaged algorithm. The FMQ-19 measures cloud heights between 100 and 25,000 feet.

2.4.1.3. Visibility is determined at the sensor location so it may not be representative of the entire airfield. The FMQ-19 cannot report visibility less than 1/4 statute miles.

2.4.1.4. The FMQ-19 may not detect all thunderstorm and lightning activity and it cannot detect hail, volcanic ash, cloud types, or tornadic activity.

2.4.1.5. The FMQ-19 may be slow to report accurate sky conditions, visibility, and present weather during periods of rapidly changing weather conditions because these elements are calculated using time-averaged algorithms.

**2.4.2. Unreliability of PMSV.** **Figure 2.1** list the radio limitation of PMSV.

**Figure 2.1. Radio Limitation of PMSV.**

From 085° through 155° beyond 35NM at or below FL200
From 315° through 005° beyond 40NM at or below FL200
From 230° through 290° beyond 55NM at or below FL200

2.4.3. Weather Radar. There are currently no known impacts to the local weather radar. With the proliferation of wind turbine projects in the local area, future unknown impacts may be observed.

**2.5. Weather Observations and Limitations.**

2.5.1. The AN/FMQ-19 and JET are certified to operate automatically and all observations will be taken and disseminated in this manner unless the system fails partially (e.g. sensor failure) or completely (e.g. communication failure), or augmentation is required. The criteria for manual observations are described in paragraph **2.6**.

2.5.2. Observing Locations/Observing Limitations. The official observing location for automated observations is the AN/FMQ-19 sensor location at the approach end of the active runway. The official observation location for manually observed elements is the compass rose painted approximately 50 feet southeast of AMOPS, building 805. Observing limitations for this location are:

2.5.2.1. Flightline facilities block the forecaster's view of the approach end of Runway 03L/R and the horizon from 190°-330°.

2.5.2.2. High intensity ramp lights diminish the ability to determine visibility at night.

2.5.2.3. Loud noises may prevent the forecaster from hearing thunder.

2.5.2.4. The Alternate Operating Location limitations are listed in paragraph **2.14.1**.

2.5.3. Types of Observations. Two types of observations are disseminated to describe the weather at Nellis AFB: Aviation Routine Weather Report (METAR) and Non-routine (Special) Aviation Weather Report (SPECI). AFH 11-203V2, *Weather for Aircrews*, paragraph 3.1 gives a step-by-step example showing how to read METAR and SPECI observations.

2.5.3.1. METAR is a routine hourly observation as well as the primary observation code used throughout the world for reporting surface meteorological data. METAR reports contain information on wind, visibility, runway visual range, present weather and obscurations, sky condition, temperature, dew point, and altimeter setting. In addition, encoded and plain language information that elaborates on the weather conditions report may be appended to the report.

2.5.3.2. SPECI is an unscheduled observation transmitted when any of the special criteria have been observed. SPECI will contain all data elements found in a METAR report plus additional remarks that elaborate on data in the body of the report. All SPECI reports will be prepared and transmitted as soon as possible after the relevant criteria are observed. [Attachment 3](#) lists NAFB SPECI criteria.

**2.6. Augmentation of Primary Observation Equipment.** Modifying an observation generated by the AMOS or manually taking an observation is known as augmentation. Augmentation is performed only by qualified weather flight personnel under specific circumstances. The two augmentation processes are *supplementing* and *back-up*.

2.6.1. Supplementing observations: Weather flight personnel will supplement the automated observation when weather is observed that is beyond the AN/FMQ-19's capability to detect. Weather technicians will perform a Basic Weather Watch (BWW) and be prepared to supplement observations when the airfield is open and the mandatory supplemented criteria are observed and/or forecast to occur within 1 hour. Weather personnel are required to log on to the JET system and be prepared to supplement whenever a watch or warning has been issued for tornadic activity regardless of airfield status. Weather personnel are not required to supplement during airfield closure hours for other criteria. The criteria for supplementing an observation are:

2.6.1.1. Tornado or funnel cloud.

2.6.1.2. Hail greater than or equal to 1/4".

2.6.1.3. Volcanic ash.

2.6.1.4. Ice Pellets

2.6.1.5. Tower Visibility (4 SM or less and surface visibility differs by more than one reportable value).

2.6.2. Back-up observations: If the automated observation system is partially (due to individual sensor failure) or completely inoperative (due to system or communication failure) the weather flight will manually provide and disseminate weather data as necessary. The official observation point for manual observations is the compass rose painted approximately 50 feet southeast of AMOPS at building 805.

2.6.3. Recall/Augmentation procedures: Due to the favorable climatology of Nellis AFB and the robust nature of the FMQ-19, augmentation of the FMQ-19 is rarely required. Due to this, the 57 OSS/OSW Airfield Support normal hours of operation do not match the Nellis AFB airfield hours. This also allows the 57 OSS/OSW to use its limited manning resources to integrate with the Nellis mission and provide tailored weather to the warfighter. In accordance with AFMAN 15-111, the potential risks of not matching the airfield hours have been identified and are mitigated by the following recall/augmentation procedures:

2.6.3.1. When the Airfield Support section is closed, the standby forecaster will be available at all times to provide weather support to all airfield agencies. When local wing flying operations are occurring, the Mission Integration forecaster may be immediately contacted while the standby forecaster is en-route. The dedicated standby cell phone and Mission Integration numbers are listed in [Table 1.1](#)

2.6.3.2. Weather personnel will be present (or recalled) to back-up weather observations at all times in the event of a partial or complete outage of weather observing equipment.

2.6.3.3. Weather personnel will be present (or recalled) to supplement the observation as described in section 2.6.1.

**2.7. Meteorological Watch (METWATCH).** METWATCH is the process of monitoring terrestrial and space weather in an area. The purpose of the METWATCH is to identify when and where observed conditions significantly diverge from forecasted conditions and to update or amend forecast products and notify supported agencies.

2.7.1. The weather flight conducts a METWATCH for Nellis AFB during flight operating hours; this is part of the eyes forward function the weather flight performs for the 25 OWS.

2.7.2. The 25 OWS also provides a METWATCH for Nellis AFB for TAF and WWA support. They will also provide coverage when the weather flight is closed.

**2.8. Continuous Weather Watch (CWW).** During a CWW, weather conditions will be continuously monitored and the observer will perform no other significant duties. At Nellis AFB the AMOS performs an automatic CWW, though the weather flight may perform a CWW if locally determined to be more appropriate due to existing weather conditions.

**2.9. Basic Weather Watch (BWW).** The purpose of a BWW is to determine the need for a SPECI observation. During a BWW weather personnel will check weather conditions, at intervals not to exceed 20 minutes since the last observation or check, when any of the following conditions are observed to be occurring or forecast to occur within 1 hour:

2.9.1. Any change in weather conditions that may require a SPECI or LOCAL observation.

2.9.2. Ceiling forms below or decreases to less than 1500 feet.

2.9.3. Ceiling dissipates or increases to equal or exceed 1500 feet.

2.9.4. Visibility decreases to less than 3 miles.

2.9.5. Visibility increases to or exceeds 3 miles.

2.9.6. Precipitation (any form).

2.9.7. Thunderstorms.

2.9.8. Fog or mist.

2.9.9. All supplemental and back up-criteria specified in section 2.8.

**2.10. Cooperative Weather Watch.** To ensure accuracy in weather observations, a Cooperative Weather Watch has been established between the weather flight and the 57 OSS Airfield Operations Flight (57 OSS/OSA). The primary concern of the Cooperative Weather Watch is tower visibility different than the reported surface visibility, local PIREPs, and any unreported weather conditions that could affect flight safety or location operations and resources.

2.10.1. The weather flight will provide initial visibility observation training and certification to control tower personnel. Use of AFAS and JET are part of this initial training. The weather flight will also assist with updating and validating tower visibility charts annually.

2.10.2. ATC personnel are able to assist the weather flight with resource protection and flight safety in several ways.

2.10.2.1. Control tower personnel who are certified to evaluate tower visibility will notify the weather flight or standby forecaster when: (1) ATC personnel disseminate a visibility report for the WF, (2) it meets the criteria for a tower visibility remark (less than 4 SM & differs by a reportable value from prevailing visibility), and (3) the observation crosses or matches an operationally significant ATC threshold.

2.10.2.2. Control tower personnel will report any occurrence of unreported weather conditions that could affect flight safety or be critical to the safety or efficiency of other local operations or resources.

2.10.2.3. ATC personnel will solicit PIREPs and relay all PIREPs received to the weather flight for dissemination within 5 minutes or as soon as possible.

**2.11. Pilot to METRO Service (PMSV).** The weather flight monitors 323.9 MHz to respond to requests for weather information from aircrews in flight or on the ground. The weather flight will solicit PIREPs from aircrews contacting the weather flight. PMSV is not available when the weather flight is closed. PMSV radio limitations are listed in [Figure 2.1](#) and the PMSV radio outage contingency plan is described in paragraph [2.13.3](#).

**2.12. PIREPs.** All PIREPs received by the weather flight will be disseminated over JET system or through a backup method.

2.12.1. Any base agency receiving a PIREP will relay it within 5 minutes of receipt to the weather flight for dissemination.

**2.13. Weather Equipment Outages.** The weather flight has developed procedures to continue operations and mission support in the event of equipment or communication failure.

2.13.1. AN/FMQ-19 sensor or equipment failure:

2.13.1.1. As an alternate source of lightning data the weather flight maintains a subscription with a commercial Internet weather information provider.

2.13.1.2. For sensor outages other than lightning detection, weather flight personnel will switch to the inactive sensor suite if possible (paragraph [2.2](#) lists the sensors in each suite) or use tactical equipment at the official manual observation location or AOL.

Wind and pressure values from tactical equipment are reported as estimate. Any unrepresentative meteorological values will be reported as missing (M).

2.13.2. JET: Weather flight personnel will request observation transmission by another Air Force weather unit and verbally pass the observation to the agencies in **Table 2.1**. Weather watches, warnings, and advisories will also be relayed to these agencies by the issuing organization (i.e. 25 OWS or the weather flight).

**Table 2.1. Observation Phone Dissemination.**

Order of Dissemination	DSN	Commercial
Tower/SOF	682-3275/2708	(702) 652-3275/2708
NATCF (RAPCON)	682-4222	(702) 652-4222
Command Post	682-2446/2447	(702) 652-2446/2447
25 OWS	228-6674/6673	(520) 228-6673/6674
AMOPS	682-4600/4601	(702) 652-4600/4601

2.13.3. PMSV radio: For outages expected to be less than one hour in length, ATC personnel will monitor the PMSV frequency and relay PIREPS and requests for weather information. If the outage is expected to last more than one hour, AMOPS will send a Notice to Airman (NOTAM). The NOTAM will state PMSV service is unavailable and aircraft with phone patch capabilities should contact the 25OWS for assistance and current weather at the phone numbers given in **Table 1.2**.

2.13.4. LAN: The weather flight will use telephones, cell phones, or fax to continue weather support.

2.13.4.1. If required to disseminate observations or weather warnings, advisories, and watches by phone, the responsible agency (either the weather flight or 25OWS) will call the agencies listed in **Table 2.1**.

2.13.4.2. Requests for weather briefs will be passed on to the 25 OWS Flight Weather Briefer. When the brief is completed the Flight Weather Briefer will fax the finished product to the weather flight or to the customer requesting the weather brief.

2.13.4.3. If the outage also includes base telephones, the weather flight will turn over responsibility for production and dissemination of all Nellis weather products to the 25 OWS. A runner will be employed as needed to pass critical weather information to the SOF and Tower. Ramp net radios or cell phones may also be used as a means to pass critical info immediately. As manpower and duties allow, runners will attempt to pass weather data to other primary agencies. Supported agencies may have to provide a runner to get weather information from the weather flight.

**2.14. Alternate Operating Location (AOL).** The weather flight AOL is on the 10th floor of building 2064 (Air Traffic Control Tower), DSN 682-4551, commercial (702) 652-4551. In the event of an evacuation the weather flight will relocate to the AOL. The weather flight will

continue to provide airfield, mission weather, resource protection, and staff integration services once established at the AOL.

2.14.1. Operations at the AOL are subject to the following site-specific limitations:

2.14.1.1. No PMSV radio. See paragraph 2.13.3 for the backup procedure.

2.14.1.2. No fax machine.

2.14.2. Weather flight personnel will notify the agencies listed in Table 2.1 that weather operations are relocating or have relocated to the AOL as soon as it is practical.

2.14.3. Until weather operations are relocated and re-established, the 25 OWS will perform METWATCH and MISSIONWATCH.

2.14.4. If the AMOS is not fully operational, weather flight personnel will take and transmit an observation within 15 minutes of arrival at the AOL. To ensure information is relayed promptly the observation will be disseminated by phone to the agencies listed in Table 2.1 before normal dissemination procedures are followed.

2.14.5. The “eyes forward” function provided for the 25 OWS will begin as soon as possible but not before the initial observation, if necessary, is transmitted.

2.14.6. The weather flight will notify the squadrons listed in Table 2.2 of AOL operations and of impacts to weather support.

**Table 2.2. AOL Squadron Notification List.**

DSN: 682-XXXX		
Commercial: (702) 652-XXXX		
<b>Voice</b>		<b>Fax</b>
<b>USAF Weapons School</b>		
16 WPS	-3377	-7918
17 WPS	-8801	-8318
34 WPS	-6046	Fax to arms office -8655
66 WPS	-8397	-8655
433 WPS	-8613	No fax
<b>53<sup>rd</sup> Wing</b>		
88 TES	-4930	-2168
422 TES	-4997	-6197
<b>57<sup>th</sup> Wing</b>		
Thunderbirds	-4115	-4116
64 AGRS	-2238	-6229
*Red Flag Wx	-2395	-5084
*Green Flag Wx	-4262	
<b>Tenant Units</b>		
66 RQS	-6692	-8609

**2.15. Aircraft and Ground Mishaps.** When notified of any aircraft or ground mishap (weather-related or not) requiring OPREP-3 or local reporting, the weather flight will contact the 25 OWS and collaborate to ensure applicable and available terrestrial and space weather data is archived.

2.15.1. The weather flight will coordinate with other relevant units (e.g. TACC for an AMCGained mission) to ensure required data is saved.

2.15.2. The weather flight, 25 OWS, and other relevant units will archive data for the region of operations from 12 hours before the time of the event through 6 hours after the event.



## Chapter 3

### MISSION WEATHER SERVICES.

**3.1. General.** The weather flight provides mission-tailored weather services, METWATCH, and MISSIONWATCH. In collaboration with the weather flight, the 25 OWS develops and disseminates the Nellis AFB Terminal Aerodrome Forecast (TAF), the NTTR Military Operating Area Forecast (MOAF), and weather watches, warnings, and advisories.

**3.2. Terminal Aerodrome Forecast (TAF).** A TAF is an aviation forecast for a specific aerodrome providing meteorological information for flight planning and command and control. Unless otherwise specified, elements in the TAF apply to the area within a 5 statute mile radius of the center of the aerodrome. TAFs are disseminated as coded weather bulletins and AFH 11-203V2, *Weather for Aircrews*, para 3.1 gives a step-by-step example showing how to read TAFs.

3.2.1. The 25 OWS will amend the TAF when conditions not in the forecast occur and are expected to last at least 30 minutes, or if forecast conditions do not occur by the specified hour and are not expected to occur within the next 30 minutes. TAF amendment criteria are listed in [Attachment 4](#).

3.2.2. The Nellis TAF is issued every 8 hours, at 01Z, 09Z, and 17Z, and provides a 30 hour forecast. A TAF is normally not issued if the airfield will be closed for more than 8 hours.

3.2.3. The TAF will contain a LAST NO AMDS AFT D1D1H1H1 NEXT D2D2H2H2 when the airfield will be closed. Times are rounded to the nearest hour UTC. This remark is used when the next TAF will not be issued at its scheduled time, i.e. the airfield will be closing for more than 8 hours. D1D1H1H1 is the day and time after which the TAF will no longer be amended and D2D2H2H2 is the day and time the next TAF will be issued.

**3.3. Mission Planning Forecast (MPF).** The Nellis MPF is produced by the weather flight for mission planners and contains a two day weather outlook for the NTTR. This non-amendable forecast is issued no later than 1400L on days the weather flight is open and the NTTR is in use. The MPF is posted to the weather flight SharePoint site, linked in paragraph 1.7.2.

**3.4. Mission Weather Product (MWP).** The MWP (previously known as the Mission Execution Forecast or MEF) is a customized weather product providing terrestrial and space weather data and forecasts for a specific mission or set of missions that integrates aerospace weather with the customer's tactics, weapon systems, environmental sensitivities of equipment, and other operational requirements. The weather flight produces MWPs tailored to the types of aircraft and missions scheduled for the day. The issue time of the morning MWP depends on first take-off and may vary based on the flying schedule and weather conditions. The afternoon and evening MWPs are issued at 1200L and 1800L as necessary, Monday – Friday. MWPs are valid for 8 hours; weather flight personnel will update the current MWP if any of the criteria listed in [Attachment 6](#) occur.

3.4.1. MWPs will provide the following information:

3.4.1.1. Takeoff and landing data.

3.4.1.2. Range weather forecasts for the areas of operation.

3.4.1.3. Solar, lunar, and space weather data.

3.4.1.4. Forecasts for alternate airfields.

3.4.1.5. Space weather impacts to HF and UHF communications, forecast GPS error, and forecast high altitude radiation dosage.

3.4.2. The MWP is posted to the weather flight SharePoint site, linked in paragraph 1.7.2. The format, timing, and dissemination of the MWP are determined by the requirements of supported units. The weather flight coordinates with each unit to determine the content and format of the MWP, ensuring it contains decision-grade information applicable to the mission.

**3.5. Flight Weather Briefing (FWB).** FWBs support aircrews requiring enroute weather when departing Nellis AFB and are produced by the weather flight as a DD Form 175-1 *Flight Weather Brief* or as a verbal briefing. If requested, FWBs can be posted to the weather flight SharePoint site, linked in paragraph 1.7.2.

3.5.1. The weather flight will provide FWB support to transient aircrews IAW duty priorities (see [Table 1.3](#)). If unable to assist the aircrew within 30 minutes the weather flight will either arrange for the 25 OWS to generate and deliver the FWB or provide contact information for the 25 OWS so the aircrew can arrange for a flight weather briefing in the mission planning room. Under no circumstances will the weather flight deny assistance to an aircrew requesting a FWB.

3.5.2. AMC-gained missions: The weather flight will update takeoff weather data and notify Tanker Airlift Control Center (TACC) Global Mobility Weather Operations (XOW) if the update includes mission-limiting criteria IAW AFMAN 15-129V2 Paragraph 2.8.2.

3.5.3. ACC Air Operations Squadron (AOS) controlled missions: The weather flight will brief aircrews using ACC/AOC Controlling Mission Weather Products (CMWP). Any deviations from CMWPs will be coordinated with ACC/AOS.

3.5.4. As noted in paragraph [1.10](#) all FWBs will be documented and maintained. The following items will be retained as part of the record:

3.5.4.1. Briefing time.

3.5.4.2. Briefer initials.

3.5.4.3. Aircrew call sign or mission number.

3.5.4.4. All information relayed to aircrew.

3.5.4.5. Void time, if applicable.

**3.6. Tactical Decision Aids (TDA).** Mission-specific electro-optical forecasts will be provided by the weather flight on request. Tactical Acquisition Weapons Software (TAWS), a DoD-certified application, is used by the weather flight to create TDAs for specific electro-optical weapons and sensor systems. The standard TDA produced by the weather flight includes maximum target detection range, lock-on range, and a graph of target and background temperatures over time. TDAs are posted to the weather flight SharePoint site (linked in paragraph [1.7.2](#).) or will be e-mailed or faxed if requested.

**3.7. Mission-Scale Meteorological Watch (MISSIONWATCH).** MISSIONWATCH is the process for monitoring terrestrial or space weather for predefined mission-limiting factors. The

weather flight conducts a MISSIONWATCH tailored to the missions of the day and updates supported units, the SOF, and 25OWS on changes to mission-critical conditions. The weather flight also updates the current MWP and ensures the TAF accurately reflects current and forecasted conditions. Transient aircrews are the exception to this policy.

**3.8. RED FLAG/GREEN FLAG-West.** Forecasters in support of RED FLAG or GREEN FLAG-West are responsible for all aspects of weather support to TDY aircrews and other participating personnel. Weather support includes but is not limited to mission weather briefs, weather updates, warnings, watches, and advisories and redeployment briefs after ENDEX. Weather support will be provided by a combination of Nellis and TDY weather personnel. In instances where no US forces are participating, or TDY weather personnel do not participate, the Nellis weather flight will provide or arrange all weather support. The Nellis weather flight will serve as the point of contact for TDY weather personnel and assist with the stand-up of the exercise weather area. In addition, the weather flight will provide familiarization training on weather patterns and forecasting challenges for the local area and required MOAs.

**3.9. USAFWS Weapons Integration/Advanced Integration (WI/AI).** The final phase of the Weapons School is the Advanced Integration. Weather flight personnel will provide weather support for the AI phase including coordination with the AI Project Officer on required briefings.

**3.10. Coronet Mission Briefings.** Weather flight personnel will coordinate briefing requirements with the Deployed Controlling Officer and brief aircrews as described in paragraph 3.5.

**3.11. Supervisor of Flying (SOF) Briefing.** One hour prior to the first scheduled flight the weather flight will provide the SOF a weather briefing in person or over the phone. The briefing covers current and forecasted conditions at the airfield and all military operating areas scheduled for use. As part of the MISSIONWATCH, the weather flight will alert the SOF to all mission-impacting changes to the weather. All briefings and updates will be documented and maintained as described in paragraph 1.10.

**3.12. Out of Station Briefings.** A supported unit may request weather flight participation in a mission briefing. Weather flight personnel will prepare and present a weather briefing tailored to the specific needs of the mission.

## Chapter 4

### STAFF INTEGRATION.

**4.1. General.** Staff weather services are provided by the officers and senior NCOs of the weather flight and are tailored to the needs of the supported unit. The weather flight staff will provide or arrange for all weather support or information required by supported organizations. This includes, but is not limited to, climatological, historical, and planning weather data or studies, as well as astronomical and tidal data.

**4.2. 99 ABW Stand-up Briefing.** The weather flight will provide slides for the 99 ABW/CC stand-up briefing. A seven-day weather outlook will be given and the briefer will remain to answer questions or concerns.

**4.3. Airfield Operations Board (AOB).** A member of the weather flight staff will participate as a member of the AOB as directed in AFI 13-204V3, *Airfield Operations Procedures and Programs*.

**4.4. Base Support Plan (BSP).** The weather flight will designate a primary and an alternate BSP POC. These individuals are de facto members of the Base Support Planning Committee and are responsible for the currency and accuracy of the BSP weather chapter. They will collaborate with and provide support to other members of the Base Support Planning Committee, update the 57 OSS/CC on BSP issues, and maintain a continuity book documenting the discussions and rationale behind the BSP weather chapter. At least one POC will attend all BSP meetings.

**4.5. Instrument Refresher Course (IRC) Briefing.** The IRC briefing is a mandatory class for all personnel on flying status. The IRC weather brief is a refresher on local weather, weather hazards, weather equipment, and online tools and data available from the weather flight.

**4.6. Flight Information Publication (FLIP) Review.** The weather flight will review each new FLIP edition applicable to Nellis AFB immediately upon distribution to verify the accuracy of weather support information and will request changes through AMOPS. In addition, airfield minima will be checked to ensure SPECI observation criteria are correct. The 25 OWS will be notified of any modifications to SPECI criteria.

**4.7. Toxic Corridor, Chemical and Effective Downwind Messages.** IAW NAFB 10-2, *Comprehensive Emergency Management Plan*, upon notification of any incident that involves a toxic spill or base emergency, the weather flight will provide appropriate weather data for toxic corridor calculations performed by 99 CES/CEX. Updates will be provided as necessary.

4.7.1. Chemical Downwind Messages (CDM) and Effective Downwind Messages (EDM) are available upon request.

## Chapter 5

### RESOURCE PROTECTION.

**5.1. General.** The weather flight and the 25 OWS collaboratively provide resource protection through forecasts, METWATCH, and weather alerts providing enough advance notice to allow units to prepare.

**5.2. Definition of terms.**

5.2.1. Severe weather: Any weather condition that poses a hazard to property or life.

5.2.2. Weather watch: Issued when the potential exists for severe weather. Organizations and personnel should consider taking protective measures.

5.2.3. Weather warning: Issued when severe weather is imminent or occurring. Organizations and personnel must take immediate protective actions.

5.2.4. Weather advisory: Issued when non-severe weather conditions impacting operations are occurring or are forecast to occur.

5.2.5. WWA: Watch, warning, advisory. Used as a non-specific reference to these notices.

5.2.6. Desired lead time (DLT): The total amount of time required to disseminate a forecast WWA from the issuing organization through the local dissemination tree to the supported agency plus the amount of advance notice a supported agency requires before the onset of the weather. For example, if the DLT is 30 minutes and it takes 5 minutes for the WWA to reach the supported agency, then that agency will have 25 minutes advance notice. WWA criteria are listed in attachment 8.

5.2.7. Special Weather Statement (SWS): Advance notice of widespread hazardous weather conditions with the potential to affect military installation in the specified geographic area. They are normally issued 48-72 hours in advance.

**5.3. Delineation of Duties.** The 25 OWS is responsible for issuing forecast WWAs and SWS products. The weather flight is responsible for issuing all observed warnings and advisories, and will issue warnings normally issued by the 25OWS in the event of imminent threat to life or property.

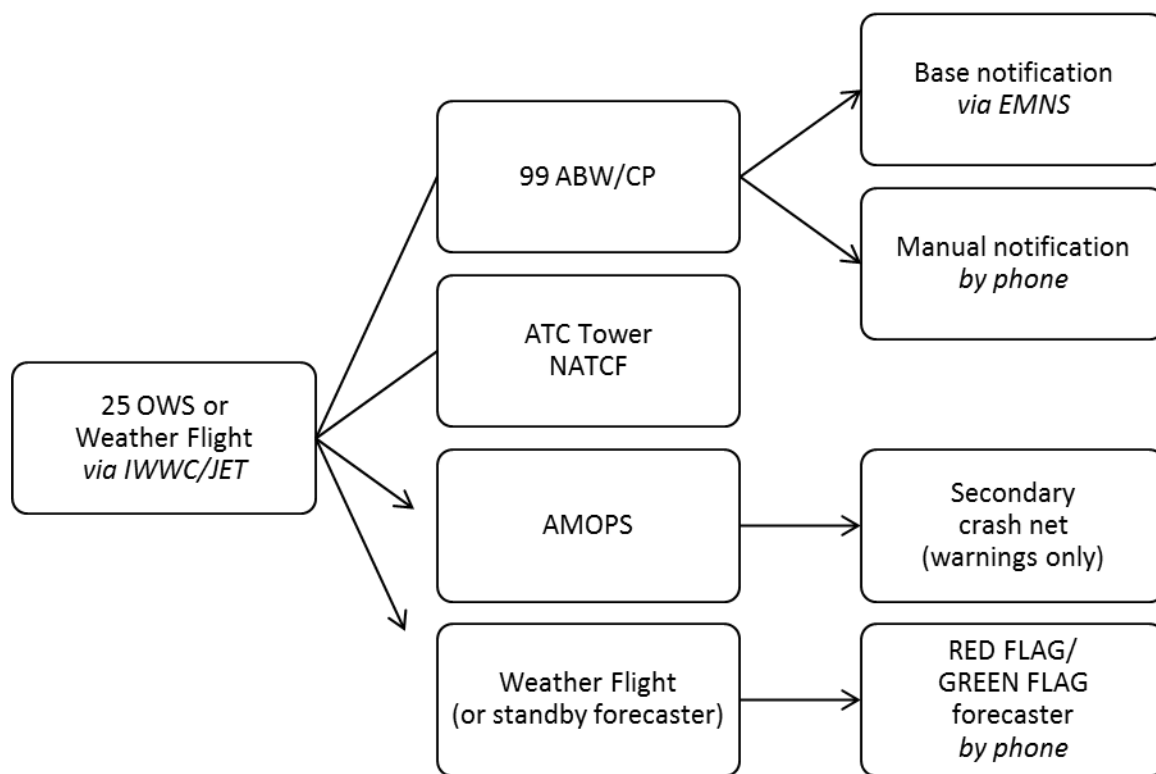
5.3.1. When weather flight personnel are on duty the 25 OWS will not issue observed advisories.

5.3.2. When weather flight personnel are not on duty the 25 OWS will issue observed thunderstorm advisories and observed lightning advisories.

**5.4. WWA Numbering.** Weather watches, warnings, and advisories are numbered consecutively by type. Each WWA is first identified by the type of message (watch, warning, or advisory) followed by an identification number following the format MMXXX. MM is the two digit month of issue UTC and XXX is the sequence number. For example, the message “Weather Warning 02005” means the message was issued in February and was the fifth warning issued that month. The message “Weather Advisory 12-013” means the message was issued in December and was the thirteenth advisory issued that month.

**5.5. Primary Dissemination.** WWAs are disseminated through JET using the automated Integrated Weather Warning Capability (IWWC). The WWA is displayed on the AFAS monitors in the ATC Tower and NATCF and in JET at the weather flight. IWWC transmits an automated message via telephone to the command post and AMOPS. The command post uses the Nellis AFB Emergency Mass Notification System (EMNS) to push the WWA to computers on base. EMNS also makes automated calls to individuals who have coordinated with the CP. AMOPS activates the secondary crash net IAW CEMP 10-2 for situations in paragraph 6.10.1. **Figure 5.1** illustrates this notification flow.

**Figure 5.1. Primary WWA Notification Flow.**



**5.6. Backup Dissemination.** If JET is inoperative, the organization issuing the WWA (either the 25 OWS or the weather flight) will contact the agencies listed in **Table 2.1** by phone. The contacted agencies will follow their backup notification procedures as required.

**5.7. Severe Weather Action Plan (SWAP).** The SWAP defines the events, personnel requirements, and operating procedures required to mitigate the threat of severe weather.

5.7.1. At a minimum the SWAP will be activated whenever watches or warnings are issued for the following conditions:

5.7.1.1. Tornado.

5.7.1.2. Severe thunderstorms (surface winds  $\geq 50$  kts associated with thunderstorms or hail  $\geq 3/4$  inch diameter).

5.7.1.3. Hail  $\geq 1/4$  inch diameter.

5.7.1.4. Damaging winds (surface winds  $\geq 50$  kts not associated with thunderstorms).

5.7.1.5. Freezing precipitation.

5.7.2. The severe weather team consists of a team lead (one of the officers or NCOICs of the weather flight) and any weather flight personnel recalled by the team lead as required to efficiently handle weather conditions and increased workload.

5.7.2.1. SWAP personnel will perform enhanced METWATCH and MISSIONWATCH, increase surveillance of local and regional conditions through reported observations, weather radar, and expand eyes forward responsibilities to support the 25 OWS.

5.7.2.2. The SWAP leader, in addition to the duties in 5.7.2.1, will perform Operational Reporting (OPREP) duties (see paragraph 5.8).

5.7.2.3. The weather flight will remain open and SWAP will remain in effect until the expiration or cancellation of the watches and warnings responsible for SWAP activation.

5.7.3. The 25 OWS will coordinate with the Nellis forecaster prior to issuing a severe weather watch or, time permitting, a severe weather warning. The forecaster will activate the SWAP and recall the severe weather team lead as necessary.

5.7.3.1. Due to the danger posed by severe weather, the 25 OWS may issue observed severe weather warnings before contacting the weather flight.

5.7.3.2. During periods when the weather station is unmanned, the 25 OWS will contact the standby forecaster. If the standby forecaster cannot be contacted, the 25 OWS will contact the Command Post which will contact a member of weather flight leadership.

**5.8. Operational Reporting (OPREP).** If requested by 99 ABW/CP, the weather flight commander, NCOIC, or the lead during SWAP activation will collaborate with the 25 OWS to provide weather data for the OPREP-3 report.

5.8.1. All weather information provided for a weather-related OPREP-3 report will also be sent to ACC/A3W and the 25 OWS.

## Chapter 6

### RECIPROCAL SUPPORT

**6.1. General.** The agencies listed in this chapter will provide services as described below.

**6.2. 99 ABW/CC will.**

6.2.1. Chair a review of installation severe weather preparedness, capabilities, requirements, and procedures annually IAW AFI 10-229, *Responding To Severe Weather Events*.

**6.3. 99 ABW/CP will.**

6.3.1. Disseminate weather watches, warnings, and advisories via EMNS.

6.3.2. Monitor JET IWWC for weather updates and report IWWC outages or restoration of services to the weather flight.

6.3.3. Notify the weather flight of any aircraft or ground mishap (weather-related or not) requiring OPREP-3 or local reporting.

6.3.4. Provide a copy of OPREPs containing weather data to the weather flight.

6.3.5. Relay PIREPs or reports of significant weather (including turbulence and icing) to the weather flight.

6.3.6. Notify the weather flight of events that require weather support.

6.3.7. Store and provide 24-hour access to the weather flight's classified documents in the event of weather station evacuation.

**6.4. 99 CS will.**

6.4.1. Provide support to the weather flight as directed by coordinated Service Level Agreements and Memorandums of Agreement.

6.4.2. Notify the weather flight at least 24 hours in advance of scheduled LAN or Internet outages. Notifications from the 99 CS will be distributed to the 57 OSS/OSW via the 57 OSS/OSW Organizational Email account.

**6.5. 57 OSS/OSM will.**

6.5.1. Notify the weather flight of scheduled outages to the radio tower or equipment related to the weather flight's PMSV radio.

6.5.2. Inform the weather flight about alterations to the radio tower or equipment related to the weather flight's PMSV radio as alterations may affect the range of PMSV service.

6.5.3. Maintain weather equipment technical orders (TOs) and make them available to the weather flight upon request.

**6.6. 99 AMDS/SGPB (Bioenvironmental Engineering Flight) will.**

6.6.1. Provide the base populace the Wet Bulb Globe Temperature, Heat Stress Index, Wind Chill, and Frostbite Risk Level as required.



6.6.2. Work in conjunction with the weather flight to produce and disseminate the fighter induced thermal stress (FITS) index.

**6.7. 57 WG/SE will.**

6.7.1. Notify the weather flight as soon as possible when any mishap occurs requiring a weather data save.

6.7.2. Notify the weather flight when a weather presentation is required for flight safety meetings.

**6.8. 57 OG/CC will.**

6.8.1. Establish operational weather support requirements and procedures.

6.8.2. Notify the weather flight of all changes in mission weather support.

6.8.3. Coordinate SOF, IRC, and seasonal awareness briefings with the weather flight.

**6.9. 57 OSS/OSA will.**

6.9.1. Provide a workspace with a telephone, LAN access, and 24-hour physical access to the 10<sup>th</sup> floor of building 2064 (ATC Tower) as the weather flight Alternate Operating Location.

6.9.2. 57 OSS/OSAA will.

6.9.2.1. Disseminate watches for lightning within 5 NM and all weather warnings over the secondary crash net.

6.9.2.2. Provide the weather flight updated DoD Flight Information Publications (FLIPs).

6.9.2.3. Notify the weather flight of permanent or temporary changes to airfield operating hours.

6.9.2.4. Coordinate with the weather flight before switching Building 805 between commercial and generator power.

6.9.3. 57 OSS/OSAR will.

6.9.3.1. Relay PIREPs to the weather flight within 5 minutes of receipt.

6.9.3.2. Monitor JET weather data on AFAS and report JET outages or restoration of services to the weather flight (or standby forecaster).

6.9.4. 57 OSS/OSAT will.

6.9.4.1. Relay runway and wind sensor changes to the weather flight.

6.9.4.2. Relay PIREPs to the weather flight within 5 minutes of receipt.

6.9.4.3. Monitor JET weather data on AFAS and report JET outages or restoration of services to the weather flight (or standby forecaster).

6.9.4.4. Participate in the Cooperative Weather Watch. See paragraph 2.10.

6.9.4.5. Perform a PMSV radio check upon request.

6.9.4.6. Monitor PMSV frequency as time permits if the weather flight's PMSV radio is inoperative or the weather flight evacuated building 805. See paragraph 2.13.3.

6.9.4.7. Provide ATC Tower indoctrination and orientation training for newly-assigned weather personnel.

6.9.4.8. In the event of an aircraft divert after dark, will turn on the runway lights as far in advance of the divert as possible in order to allow the FMQ-19 RVR sensor enough time to accurately measure runway visual range.

**6.10. Supervisor of Flying will.**

6.10.1. Contact the weather flight for a weather briefing prior to the first scheduled takeoff IAW AFI 11-418 Nellis AFB Supplement, Operations Supervision, paragraph 4.2.11.1.

6.10.2. Relay PIREPs to the weather flight within 5 minutes of receipt.

**6.11. 414 CTS, 549 CTS will.**

6.11.1. Ensure deployed aircrews participating in RED FLAG and GREEN FLAG know to contact forecasters for weather support.

6.11.2. Encourage deployed aircrews to submit PIREPs upon encountering significant weather (including turbulence and icing).

6.11.3. Coordinate TDA and NVG support at least 4 hours prior to brief time.

**6.12. 16 WPS, 17 WPS, 34 WPS, 66 WPS, 433 WPS, 64AGRS will.**

6.12.1. Coordinate TDA and NVG support at least 4 hours prior to brief time.

6.12.2. Submit a PIREP upon encountering significant weather (including turbulence and icing).

RICHARD H. BOUTWELL, Colonel, USAF  
Commander

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

**AFPD 15-1**, *Air Force Weather Operations*, 19 Feb 2010  
**AFI 10-206**, *Operational Reporting*, 11 Jun 2014  
**AFI 10-229**, *Responding to Severe Weather Events*, 15 Oct 2003  
**AFI 11-418**, *Nellis AFB Supplement, Operations Supervision*, 17 Sep 2014  
**AFI 15-128**, *Air Force Weather Roles and Responsibilities*, 7 Feb 2011  
**AFI 33-364**, *Records Disposition - Procedures and Responsibilities*, 22 Dec 2006  
**AFI 91-203**, *Air Force Consolidated Occupational Safety Instruction*, 15 Jun 2012  
**AFMAN 15-111**, *Surface Weather Observations*, 27 Feb 2013  
**AFMAN 15-124**, *Meteorological Codes*, 28 Feb 2013  
**AFMAN 15-129V1**, *Air and Space Weather Operations – Characterization*, 6 Dec 2011  
**AFMAN 15-129V2**, *ACCSUP, Air and Space Weather Operations – Exploitation*, 6 Aug 2013  
**AFH 11-203V2**, *Weather for Aircrews*, 16 May 2002  
**AFPAM 48-151**, *Thermal Injury*, 18 Nov 2002  
**NAFB/CAFB/NTTR Plan 10-2**, *Comprehensive Emergency Management Plan*, 15 Aug 2011

***Prescribed Forms***

DD Form 175-1, *Flight Weather Briefing*

***Abbreviations and Acronyms***

**AFAS**—Airfield Automation System  
**AFT**—After  
**AMDS**—Amendments  
**AMOPS**—Airfield Management Operations  
**AMOS**—Automated Observing System  
**AOB**—Airfield Operations Board  
**AOL**—Alternate Operating Location  
**AOS**—Air Operations Squadron  
**ATC**—Air Traffic Control  
**BSP**—Base Support Plan  
**BWW**—Basic Weather Watch  
**CDM**—Chemical Downwind Message

**CMWP**—Controlling Mission Weather Product  
**CP**—Command Post  
**CWW**—Continuous Weather Watch  
**DLT**—Desired Lead Time  
**EDM**—Effective Downwind Message  
**EMNS**—Emergency Mass Notification System  
**FLIP**—Flight Information Publication  
**FWB**—Flight Weather Briefing  
**ICAO**—International Civil Aviation Organization  
**IRC**—Instrument Refresher Course  
**IWWC**—Integrated Weather Warning Capability  
**JET**—Joint Environmental Toolkit  
**LAN**—Local Area Network  
**MWP**—Mission Weather Product  
**MEF**—Mission Execution Forecast  
**METAR**—Aviation Routine Weather Report  
**METWATCH**—Meteorological Watch  
**MISSIONWATCH**—Mission Watch  
**MOA**—Military Operating Area  
**MOAF**—Military Operating Area Forecast  
**MPF**—Mission Planning Forecast  
**NATCF**—Nellis Air Traffic Control Facility  
**NOTAM**—Notice to Airmen  
**NTC**—National Training Center  
**NTTR**—Nevada Test and Training Range  
**NVG**—Night Vision Goggles  
**NWS**—National Weather Service  
**OPREP**—Operational Report  
**OPUP**—Open Principal User Processor  
**OWS**—National Weather Service  
**PIREP**—Pilot Report  
**PMSV**—Pilot-to-Metro Service

**RAPCON**—Radar Approach Control  
**RVR**—Runway Visual Range  
**SOF**—Supervisor of Flying  
**SPECI**—Special Aviation Report  
**SWAP**—Severe Weather Action Plan  
**SWS**—Special Weather Statement  
**TACC**—Tanker Airlift Control Center  
**TAF**—Terminal Aerodrome Forecast  
**TAWS**—Tactical Acquisition Weapons Software  
**TDA**—Tactical Decision Aid  
**TO**—Technical Order  
**USAFWS**—USAF Weapons School  
**UTTR**—Utah Test and Training Range  
**WI**—Weapons Integration  
**WMO**—World Meteorological Organization  
**WWA**—Watch, Warning, Advisory

### *Terms*

**Alternate Operating Location (AOL)**—The location to which the weather flight will move in the event that Bldg 305 is evacuated.

**Automated Observing System (AMOS)**—An accredited observing system with the capability to automatically collect and disseminate observations.

**Climatology**—Historical records of weather conditions measured or observed at a specific location. Climatology is useful in planning operations beyond 5 to 7 days. It usually describes the average (or mean) conditions such as high and low temperatures and extremes.

**Continuous Weather Watch (CWW)**—Continuous monitoring of weather conditions by a member of the weather flight during which no other significant duties are performed. Both routine (METAR) and special (SPECI) weather observations will be taken and disseminated appropriate due to existing meteorological conditions.

**Desired Lead Time (DLT)**—The total amount of time required to disseminate a forecast WWA from the issuing organization through the local dissemination tree to the supported agency plus the amount of advance notice a supported agency requires before the onset of the weather.

**Eyes Forward**—One of the functions the weather flight performs for the OWS in which weather flight forecasters relay meteorological information not contained in coded observations to the OWS. It is an integral part of the METWATCH.

**Installation Data Page**—A document used by the 25 OWS defining the specific environmental support requirements, technical data, reference material, and contact information for Nellis AFB

**International Civil Aviation Organization (ICAO)**—A United Nations organization specializing in matters dealing with international aviation and navigation.

**Joint Environmental Toolkit (JET)**—The primary means used by the weather flight and the 25 OWS to create and disseminate forecasts, observations, and weather warnings, watches, and advisories.

**METAR**—METAR is a routine scheduled observation as well as the primary observation code used by the United States to satisfy requirements for reporting surface meteorological data.

**Meteorological Watch (METWATCH)**—The process of monitoring terrestrial and space weather in an area. The purpose of the METWATCH is to identify when and where observed conditions significantly diverge from forecasted conditions and to update or amend forecast products and notify supported agencies.

**Military Operating Area (MOA)**—A specific area in which military operations are occurring.

**Military Operating Area Forecast (MOAF)**—A forecast for terrestrial or space weather for a specific area in which military operations are occurring

**Mission Weather Product (MWP) OR Mission Execution Forecast (MEF)**—A customized weather product providing terrestrial and space weather data and forecasts for a specific mission or set of missions that integrates aerospace weather with the customer's tactics, weapon systems, environmental sensitivities of equipment, and other operational requirements.

**Mission Planning Forecast (MPF)**—A two-day weather non-amendable forecast for the NTTR, issued no later than 0500L on days the weather flight is open and the NTTR is in use.

**Mission Watch (MISSIONWATCH)**—The monitoring of aerospace weather for a specific mission (i.e., ground, air or space) and informing supported agencies when unforecast mission-limiting phenomena could affect operations.

**Nellis Air Traffic Control Facility (NATCF)**—The Radar Approach Control, or RAPCON, for Nellis AFB.

**Notice to Airmen (NOTAM)**—A timely notice containing information concerning the establishment, condition, or change in any aeronautical facility, service, procedures, or hazards, essential to personnel concerned with flight operations.

**Operational Weather Squadron (OWS)**—An organization responsible for providing regional weather support by producing operational-level weather forecast products and services. Nellis AFB is supported by the 25 OWS at Davis-Monthan AFB, AZ.

**Pilot Report (PIREP)**—A report of in-flight weather provided by an aircraft crewmember.

**Pilot-to-Metro Service (PMSV)**—A means for aircrews to request weather information and receive updates to flight weather briefings. Aircrew can also transmit PIREPs which are then disseminated worldwide.

**Prevailing Visibility**—The visibility considered to be representative of the visibility conditions at the official observing point.

**Runway Visual Range (RVR)**—The distance over which a pilot of an aircraft on the centerline of the runway can see the runway surface markings or its centre line.

**Severe Weather**—Any weather condition that poses a hazard to property or life.

**Severe Weather Action Procedures (SWAP)**—Defines the events, personnel requirements, and operating procedures required to mitigate the threat of severe weather.

**Space Weather**—Describes the conditions in space that affect the near-Earth space environment, satellites, and ground based systems. Space weather forecasts include impacts to radio communications and GPS systems.

**SPECI**—An unscheduled observation taken when special weather criteria are observed.

**Special Weather Statement (SWS)**—An OWS notice to supported customers of meteorological effects which could impact future operations. This notice is for situational awareness purposes only and does not require action by supported customers.

**Tactical Acquisition Weapons Software (TAWS)**—Used by the weather flight to create TDAs for specific electro-optical weapons and sensor systems. The standard TDA produced by the weather flight includes maximum target detection range, lock-on range, and a graph of target and background temperatures over time.

**Tactical Decision Aid (TDA)**—A product showing the predicted maximum detection or lock-on range of air-to-ground electro-optical weapons and sensor systems.

***Terminal Aerodrome Forecast (TAF)***—*An aviation forecast for a specific aerodrome providing meteorological information for flight planning and command and control, disseminated as coded weather bulletins.*

**Weather Advisory**—Issued when non-severe weather conditions impacting operations are occurring or are forecast to occur.

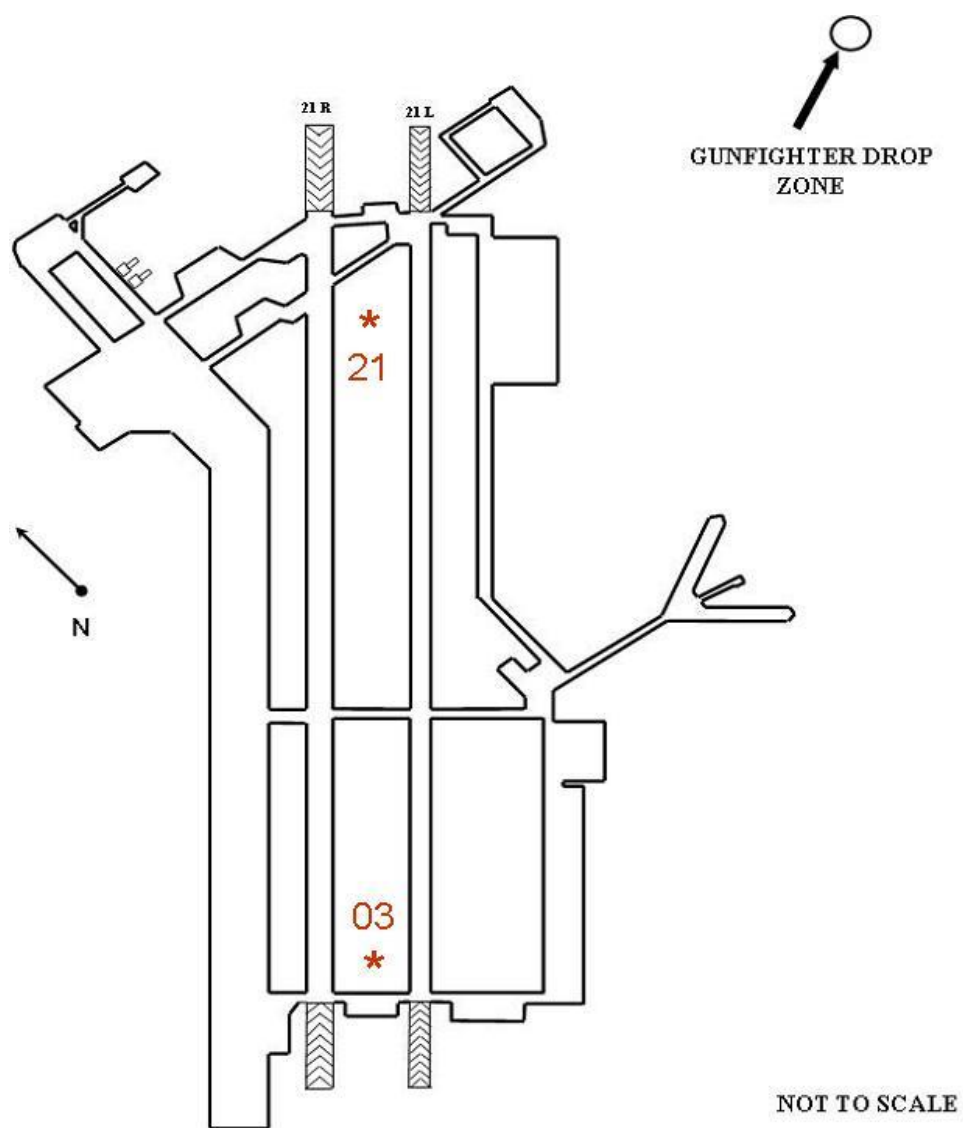
**Weather Warning**—Issued when severe weather is imminent or occurring. Organizations and personnel must take immediate protective actions.

**Weather Watch**—Issued when the potential exists for severe weather. Organizations and personnel should consider taking protective measures.

**World Meteorological Organization (WMO)**—The specialized agency of the United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences; it has a membership of 189 countries and territories.

## Attachment 2

FIGURE A2.1 LOCATION OF AN/FMQ-19.





## Attachment 3

**SPECIAL OBSERVATION CRITERIA.**

**A3.1. General.** Special observations (SPECI) are taken whenever specific criteria significant to both flight operations and resource protection occur. Criteria directing these observations are derived from guidance in AFMAN 15-111, *Surface Weather Observations*, and Flight Information Publications (FLIP). SPECI criteria will be updated in the form of a MFR in the event of corresponding FLIP updates that occur more frequently than this document is updated.

**A3.2. Procedures.** The FMQ-19 or duty forecaster (when augmenting) will take and disseminate a SPECI observation whenever any of the following criteria are observed. If the change occurs while taking an hourly observation, the criteria will be included in the scheduled hourly observation and labeled as a Record (METAR) observation:

**Table A3.1. Thresholds for Ceiling, Visibility, and RVR Special Criteria.**

The ceiling (rounded off to reportable values) forms or dissipates below, decreases to less than, or, if below, increases to equal or exceed the values listed below.	Surface visibility as reported in the body of the report decreases to less than, or, if below, increases to equal or exceed the values listed below.	Runway Visual Range (RVR) for active runway decreases to less than or, if below, increase to equal or exceed.
<b>5,000 ft</b> (FAA ATIS remark requirement)	<b>4 SM</b> (AFMAN 15-111) (TWR VIS criteria)	<b>6000 ft</b> (AFMAN 15-111)
<b>2,000 ft</b> (AFMAN 15-111)	<b>3 SM</b> (AFMAN 15-111)	<b>5500 ft</b> (DoD Flips)
<b>1,500 ft</b> (AFMAN 15-111)	<b>2 <sup>3</sup>/<sub>4</sub> SM *</b> (DoD Flips)	<b>5000 ft</b> (AFMAN 15-111)
<b>1,100 ft</b> (DoD Flips)	<b>2 <sup>1</sup>/<sub>2</sub> SM</b> (DoD Flips)	<b>4000 ft</b> (DoD Flips)
<b>1,000 ft</b> (AFMAN 15-111)	<b>2 SM</b> AFMAN 15-111)	<b>2400 ft</b> (AFMAN 15-111)
<b>900 ft</b> (DoD Flips)	<b>1 <sup>3</sup>/<sub>4</sub> SM</b> (DoD Flips)	<b>2000 ft</b> (AFMAN 15-111)
<b>800 ft</b> (AFMAN 15-111)	<b>1 <sup>5</sup>/<sub>8</sub> SM *</b> (DoD Flips)	RVR is first determined as unavailable (RVRNO) for runway in use, and when first determined that RVRNO report is no longer applicable, provided RVR conditions exist.
<b>700 ft</b> (AFMAN 15-111)	<b>1 <sup>1</sup>/<sub>2</sub> SM</b> (AFI 11-202v3 ACC SUP, Table 8.3)	RVR report required when prevailing visibility first observed < 1SM/1600 meters, again when prevailing visibility goes

		above 1SM/1600 meters
<b>600 ft</b> (DoD Flips)	<b>1 <sup>3</sup>/<sub>8</sub> SM *</b> (DoD Flips)	
<b>500 ft</b> (AFMAN 15-111)	<b>1 <sup>1</sup>/<sub>4</sub> SM</b> (DoD Flips)	
<b>200 ft</b> (DoD Flips)	<b>1 <sup>1</sup>/<sub>8</sub> SM *</b> (DoD Flips)	
	<b>1 SM</b> (AFMAN 15-111)	
	<b><sup>3</sup>/<sub>4</sub> SM</b> (DoD Flips)	
	<b><sup>1</sup>/<sub>2</sub> SM</b> (DoD Flips)	
<b>Note:</b> Items marked with an (*) indicate the FMQ-19 will NOT sense this special criterion		

**Table A3.2. Additional Special Criteria.**

<b>Criteria</b>	<b>Pertinent Data</b>	<b>Notes</b>
<b>Tower Visibility</b> (1) Notified by the control tower that tower visibility has decreased to less than or, if below, increased to equal or exceed 1, 2, or 3 statute miles, AND the control tower visibility differs from the prevailing visibility. (2) Notified by the control tower that tower visibility has decreased to less than or, if below, increased to equal or exceed locally developed special criteria AND the control tower visibility differs from the prevailing visibility.	Transmit a SPECI with the tower visibility as a remark when the criteria to the left are met.	<b>Note 1</b>
<b>Sky Condition</b> An observation will be taken when a layer of clouds or obscuring phenomenon aloft is observed below the highest published instrument landing minimum (including circling) applicable to the airfield (1,100 feet), and no layer aloft was reported below this height in the previous METAR or SPECI observation.		
<b>Wind Shift</b> The wind direction changes by 45 degrees or more in less than 15 minutes with sustained winds (or gust) of ten knots or more throughout the wind shift.		
<b>Squall</b> A strong wind characterized by a sudden onset in which the wind speed increases at least 16 knots and is sustained at 22 knots or more for at least one minute.	A SPECI is not required to report a squall if one is currently in progress.	
<b>Volcanic Ash</b> When first observed.		<b>Note 1</b>
<b>Thunderstorm</b>	A special observation	

Begins or ends, i.e. no thunderstorm activity for 15 minutes.	is not required to report the beginning of a new thunderstorm if one is currently reported in progress at the weather station.	
<b>Precipitation</b> (1) Hail begins or ends (2) Freezing precipitation begins, ends or changes intensity. (3) Ice pellets begin, end or change intensity (4) Any other type of precipitation begins or ends (e.g., rain, drizzle, snow, etc.)	Except for freezing rain, freezing drizzle, hail and ice pellets, a SPECI is not required for changes in type (e.g., drizzle changing to snow grains) or the beginning or ending of one type while another is in progress (e.g., snow changing to rain and snow).	<b>Note 2</b>
<b>Tornado, Funnel Cloud or Waterspout</b> When first observed or disappears from sight or ends.		<b>Note 1</b>
<b>Upon Resumption of Observing Function</b> (1) Within 15 minutes after returning to duty following a break in observing coverage or augmentation at the observing location unless a record observation is filed during that 15-minute period. (2) Within 15 minutes of establishing operations in the alternate observing site if AMOS is not functioning.		
<b>Aircraft Mishap</b> * A SPECI observation is not required for in-flight emergencies; however, these emergencies alert weather personnel to intensify the weather watch.	During normal weather flight hours of operation only	
Note 1: The FMQ-19 will NOT sense this special criterion Note 2: FMQ-19 will not sense hail or ice pellets.		

## Attachment 4

**TAF SPECIFICATION AND AMENDMENT CRITERIA.**

**A4.1. General.** When certain weather thresholds (ceiling, visibility, winds, precipitation, etc.) are met, the change will be reflected in the forecast for the time of occurrence (nearest hour), duration and intensity. These thresholds are called specification criteria. **Table A5.1** lists specification and amendment criteria for Nellis AFB.

**Table A4.1. Standard Specification and Amendment Criteria.**

Ceilings	Visibility	Category
GTE 2000 FT	GTE 3 SM (4800 M)	<b>E</b>
LT 2000 FT but GTE 1000 FT	LT 3 SM (4800 M) but GTE 2 SM (3200 M)	<b>D</b>
LT 1000 FT but GTE 700 FT	LT 3 SM (4800 M) but GTE 2 SM (3200 M)	<b>C</b>
LT 700 FT but GTE 200 FT	LT 2 SM (3200 M) but GTE 1/2 (0800 M)	<b>B</b>
LT 200 FT	LT 1/2 SM (0800 M)	<b>A</b>
<b>Surface Wind Speeds</b>	Specify wind speed changes of 10 knots or more.	Amend if predominant wind speed is in error by 10 knots or more.
<b>Surface Wind Gusts</b>	Specify onset, duration, and intensity of wind gusts.	Amend if wind gust speed is in error by 10 knots or more.
<b>Surface Wind Direction</b>	Specify a change in prevailing wind direction of more than 30 degrees when the predominant wind speed or gusts are expected to be 15 knots or more.	Amend if prevailing wind speed is in error by more than 30 degrees AND winds are 15 knots or more.

<b>Icing</b>	Specify Icing not associated with thunderstorms from surface to 10,000ft AGL.	Amend if beginning or ending of icing meets, exceeds, or decreases to less than or greater than moderate intensity and was not specified in the forecast.
<b>Turbulence</b>	(Weather Category II Aircraft) Specify turbulence not associated with thunderstorms from surface to 10,000 ft AGL.	Amend if the beginning or ending of turbulence meets, exceeds, or decreases to less than moderate or greater intensity and was not specified in the forecast.
<b>Weather Warning Criteria and/or Weather Advisory Criteria</b>	Specify the onset, duration, and intensity of weather warning criteria.	Including non-convective low-level wind shear: Occur, or are expected to occur, during the forecast period, but were not specified in the forecast. Were specified in the forecast, but are no longer occurring or expected to occur during the forecast period.
<b>Altimeter Setting</b>		Altimeter setting meets or exceeds 31.00 INS and was not specified in the forecast; if above, drops below 31.00 INS and was not specified during the forecast period; drops below 28.00 INS and was not specified in the forecast; or if below 28.00 INS, increases above 28.00 INS and was not specified in the forecast.
<b>Thunderstorms</b>	Specify onset and duration of thunderstorms at the aerodrome complex.	Amend if the start or end time of the thunderstorm is incorrectly specified.

<b>Temporary Conditions</b>	Specify the onset and duration of temporary conditions.	<ol style="list-style-type: none"><li>1. Amend if temporary conditions become predominant.</li><li>2. Amend if temporary conditions do not occur as forecast.</li><li>3. Amend if temporary conditions are no longer expected to occur.</li></ol>
<b>Changes to Predominant Conditions</b>	Specify the onset, duration, and intensity (if applicable) of changes to predominant conditions.	Forecast change conditions (BECMG or FM group) occur before the beginning of the specified period of change and are expected to persist; do not occur within 30 minutes after the specified time; or are no longer expected to occur.
<b>Representative Conditions</b>		Amend if forecast conditions are considered unrepresentative of existing or forecast conditions and amending the forecast improves safety, flight planning, operations efficiency, or assistance to in-flight aircraft.

## Attachment 5

## MISSION WEATHER THRESHOLDS / AIRCRAFT SENSITIVITIES

**A5.1.** MWPs are verified using criteria based on airframe and mission type. Table A6.1 lists the take-off/recovery criteria for locally assigned aircraft. Due to the myriad of mission types flown by aircraft at Nellis AFB, the weather flight classifies missions into nine separate categories. Table A6.2 lists the operating area limitations based on the mission type categories. Table A6.3 lists the specific mission types flown at Nellis AFB and identifies which *Mission Operating Area Limitations* category it falls under.

Table A5.1. Airframe Restrictions.

Airframe	Ceiling	Visibility	WX	Surface Winds	Cross Winds	Turbulence	Icing
A-10	< 1,500ft	< 3 SM	TS W/I 10NM	35KT	> 35KT	Observed MDT	Observed LGT
F-15C	< 1,500ft	< 3 SM	TS W/I 10NM	35KT	> 30KT	Observed MDT	Observed LGT
F-15E	< 1,500ft	< 3 SM	TS W/I 10NM	35KT	> 30KT	Observed MDT	Observed LGT
F-16	< 1,500ft	< 3 SM	TS W/I 10NM	35KT	> 25KT	Observed MDT	Observed LGT
F-22A	< 1,500ft	< 3 SM	TS W/I 10NM	35KT	> 25KT	Observed MDT	Observed LGT
F-35	<1,500ft	<3 SM	TS W/I 25NM	35KT	> 20KT	Observed MDT	Observed LGT
HH-60	< 700ft	< 3 SM	TS W/I 10NM	45KT	No Criteria	Observed MDT	Observed LGT

Table A5.2. Mission Operating Area Limitations.

Mission Type	AA	AIR DEMO	CAS	CSAR	DCS	LOWAT	WI/AI	NTF	SA
Operating Area Ceiling (Day)	10,000 ft AGL	1,500ft AGL	1,500ft AGL	700ft AGL Helo 1,500 ft AGL FixWing	700ft AGL	1,500ft AGL	700ft AGL	No Criteria	10,000 ft AGL
Operating Area Ceiling (Night)	10,000 ft AGL	1,500ft AGL	3,500ft AGL	700ft AGL Helo 1,500 ft AGL FixWing	No Criteria	13,000ft AGL	1,500ft AGL	800ft AGL	10,000 ft AGL
Airspace	10K clear airspace between 10K – 50K	None	Clear below 2K AGL	None	None	Clear below 10,000ft AGL	Clear below 10,000ft AGL	None	Clear below 10,000 ft AGL
Surface Visibility (Day)	LT 5 SM	LT 5 SM	LT 3 SM	LT 3 SM	LT 1 SM	No Criteria	LT 5 SM	LT 2 SM	LT 5 SM
Surface Visibility (Night)	< 5 SM	< 5 SM	< 5 SM	< 3 SM	< 1 SM	No Criteria	< 5 SM	< 2 SM	< 5 SM
Flight Level Visibility	None	None	< 3 SM	None	None	None	None	None	None
Operating Area Surface Winds	GTE 35KT	GTE 35KT	GTE 35KT	GTE 40KT	GTE 40KT	GTE 35KT	GTE 35KT	GTE 35KT	GTE 35KT
Thunder storms	25% coverage in area	25% coverage in area	25% coverage in area	25% coverage in area	25% coverage in area	25% coverage in area	25% coverage in area	25% coverage in area	25% coverage in area
Turbulence	None	None	None	None	None	None	None	None	None
Icing	Severe	Severe	Severe	Severe	Light	Severe	Light	Light	Severe



**Table A5.3. Mission Operating Area Limitations Categories.**

<b>AA</b>
A/R, ACBT, ACM, ACT, AHC, ASC, BAQ, BFM, BLUE AIR, CK RIDE, CT, DACT, DCA, EA SPIN-UP, EAC, ECT, EMSIP, F22 SPT, INCTV, INST, INST, INT TD&E, JOINT HAWK, MDO, MMC, MSIP, NVG, OCA, OCF, OTHER, RED AIR, RED FLAG, S-6 RRR, SDT, SUITE 6, STE 3.2C1, TEST, TEST SPRT, TI, TUG, UNKN, XC
<b>AIRDEMO</b>
LAO/AHC-X, LOWAT-X, TS-X, LTS-X, PDTS-X, DTS-X, WTS-X, STS-X, LSTS-X, RSTS-X, LDSTS-X, PHOTO-X
<b>CAS</b>
<b>CSAR</b>
<b>DCS</b>
<b>LOWAT</b>
LAO, LOWAT
<b>WI/AI</b>
<b>NTF</b>
BHM-1, DAR, FCF, OFF STN TRNG
<b>SA</b>
AG-XX, BSA, CAS, DWOPS-EP, EP/CONTACT, FAC., FE-X, MOV TGT, NCSS, NMOPS, SA-X, SAC, SAT, SEAD, TAC, WE-X, WPN, WS SUPPORT

## Attachment 6

## MISSION WEATHER PRODUCT (MWP) AMENDMENT CRITERIA

**A6.1.** Table A6.1 lists the amendment criteria to be applied to the Take-Off and Landing portions of the MWP. Table A6.2 lists the amendment criteria to be applied to the Range Weather Forecasts section of the MWP and is based on the Mission Limiting Parameters outlined in [Attachment 5](#).

**Table A6.1. MWP Amendment Criteria for Takeoff and Landing Data.**

Item		Remarks
Surface Wind Speeds	Specify wind speed changes of 10 knots or more	Amend if predominant wind speed is in error by 10 knots or more
Surface Wind Gusts	Specify onset, duration, and intensity of wind gusts	Amend if wind gust speed is in error by 10 knots or more
Surface Wind Direction	Specify a change in prevailing wind direction of more than 30 degrees when the predominant wind speed or gusts are expected to be 15 knots or more	Amend if prevailing wind speed is in error by more than 30 degrees AND winds are 15 knots or more
Ceilings and Visibility	Criteria outlined in table A4.1 for ceilings and visibility	Amend based on changing of categories in table A4.1
Icing	Specify Icing not associated with thunderstorms from surface to 10,000ft AGL	Amend if beginning or ending of icing meets, exceeds, or decreases to less than or greater than moderate intensity and was not specified in the forecast
Turbulence	(Weather Category II Aircraft) Specify turbulence not associated with thunderstorms from surface to 10,000 ft AGL	Amend if the beginning or ending of turbulence meets, exceeds, or decreases to less than moderate or greater intensity and was not specified in the forecast
Weather Warning Criteria and/or Weather Advisory Criteria	Specify the onset, duration, and intensity of weather warning criteria	Including non-convective low-level wind shear: Occur, or are expected to occur, during the forecast period, but were not specified in the forecast. Were specified in the forecast, but are no longer occurring or expected to occur during the forecast period
Altimeter Setting		Altimeter setting meets or exceeds 31.00 INS and was not specified in the forecast; if above, drops below 31.00 INS and was not specified during the forecast period; drops below 28.00 INS and was not

		specified in the forecast; or if below 28.00 INS, increases above 28.00 INS and was not specified in the forecast.
Thunderstorms	Specify onset and duration of thunderstorms at the aerodrome complex	Amend if the start or end time of the thunderstorm is incorrectly specified
Temporary Conditions	Specify the onset and duration of temporary conditions	<ol style="list-style-type: none"> <li>1. Amend if temporary conditions become predominant.</li> <li>2. Amend if temporary conditions do not occur as forecast.</li> <li>3. Amend if temporary conditions are no longer expected to occur.</li> </ol>
Changes to Predominant Conditions	Specify the onset, duration, and intensity (if applicable) of changes to predominant conditions	Forecast change conditions (BECMG or FM group) occur before the beginning of the specified period of change and are expected to persist; do not occur within 30 minutes after the specified time; or are no longer expected to occur.
Representative Conditions		Amend if Forecast conditions are considered unrepresentative of existing or forecast conditions and amending the forecast improves safety, flight planning, operations efficiency, or assistance to in-flight aircraft. E.g. Altimeter Setting

**Table A6.2. MWP Amendment Criteria for Range Weather Forecast.**

Item	Remarks
Ceilings	<p>Unforecasted change in ceilings resulting in the operating area ceiling crossing one of the following levels (AGL):</p> <p>14,000 ft;</p> <p>10,000 ft;</p> <p>5,000 ft;</p> <p>1,500 ft;</p> <p>800 ft (Night);</p> <p>700 ft (Day)</p>
Airspace Sky Condition	<p>Unforecasted change in sky condition in the airspace crossing one of the following thresholds (MSL):</p> <p>10,000 ft clear airspace between 10K – 30K;</p> <p>Clear below 10,000 ft; (MSL)</p> <p>Clear below 2,000 ft (AGL)</p>
Surface Visibility	<p>Unforecasted change in visibility in the airspace crossing one of the following thresholds:</p> <p>5 SM (8000 M);</p> <p>3 SM (4800 M);</p> <p>2 SM (3200 M);</p> <p>1 SM (1600 M)</p>
Surface Winds	<p>Unforecasted change in surface winds resulting in wind speeds, sustained or gust, crossing the following thresholds:</p> <p>40KT; 35KT</p>
In-Flight Hazards	<p>Unforecasted change of turbulence intensity crossing through the moderate category for the airframe in the operating area.</p> <p>Unforecasted change of icing intensity crossing through the light category in the operating area.</p> <p>Unforecasted change start/stop of thunderstorms in the operating area.</p>
Issuance/Cancellation/Extension of a weather watch, warning or advisory	

## Attachment 7

**WEATHER WATCH, WARNING, AND ADVISORY CRITERIA**

**A7.1.** Lists all WWA's issued for Nellis AFB and the NTTR. The following is listed: WWA type, criteria of the product issued, and the desired lead time (DLT). With the exception of observed advisories for turbulence, icing, and thunderstorms (in bold below), all products are issued for a 5 nm radius from the center point of the airfield at Nellis AFB.

**Table A7.1. Weather Watch, Warning, and Advisory Criteria.**

<b>WWA Type</b>	<b>Criteria</b>	<b>DLT</b>
Warning	Tornado expected (SWAP)	1:00
Warning	Freezing precipitation expected (SWAP)	1:00
Warning	Forecasted hail $\geq 3/4$ in. (SWAP)	1:00
Warning	Forecasted heavy rain $\geq 1/2$ in. in 1 hour	1:00
Warning	Forecasted high winds $\geq 50$ kts (SWAP)	1:00
Warning	Forecasted Hail $\geq 1/4$ in but $< 3/4$ in. (SWAP)	1:00
Warning	Lightning observed/occurring within 5nm	0
Warning	Snow $\geq 2$ in. in 12 hours	1:00
Warning	Winds $\geq 35$ kts but $< 50$ kts	:30
Watch	Potential for tornado exists (SWAP)	0
Watch	Potential for freezing precipitation exists (SWAP)	0
Watch	Potential for hail $\geq 3/4$ in (SWAP)	0
Watch	Potential for hail $\geq 1/4$ in but $< 3/4$ in. (SWAP)	0
Watch	Potential for heavy rain $\geq 1/2$ in. in 1 hour	0
Watch	Potential for heavy snow $\geq 2$ in. in 12 hours	0
Watch	Potential for lightning within 5nm	:30
Watch	Potential for winds $\geq 35$ kts but $< 50$ kts	0
Watch	Potential for winds $\geq 50$ kts	0

Advisory	Forecasted ceiling <500ft	1:30
Advisory	Observed crosswinds >=25kts	0
Advisory	Observed crosswinds >=20kts	0
Advisory	Forecast Ice FOD temp <=7 C and DP depression <=5 C	1:00
<b>Advisory</b>	<b>Observed any intensity icing below 10k (no tstms)</b>	<b>0</b>
Advisory	Observed FITS	0
Advisory	Forecasted temperature <=32 F	1:00
<b>Advisory</b>	<b>Observed thunderstorms within 15nm</b>	<b>0</b>
<b>Advisory</b>	<b>Observed moderate or greater turbulence below 10k (no tstms)</b>	<b>0</b>
Advisory	Forecasted visibility <2sm	1:00
Advisory	Observed winds >=35kts at Nevada Test & Training Range	0
Advisory	Forecast winds >=25kts but <35kts	:30